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DEPARTMENT OF ANTHROPOLOGY

BERKELEY, CALIFORNIA 94720

March 25, 1971

Professor Joshua Lederberg
Department of Genetics
School of Medicine
Stanford University
Stanford, California 94305

Dear Josh:

I apologize for not replying sooner, but I have been unusually busy. This kind of analysis seems futile. It obscures the events of history by trying to smooth them, using a pseudo-scientific model.

There was not one point of origin, but the beginnings of the many different traits (various plants, grains, animals, new techniques, etc.) which finally get called "Neolithic" were over a very wide area of the Near East, probably including Asia Minor, some of North Africa, and possibly extending into what is now India. The "origin" was over several thousand years, and it has taken archeologists a long time to rid themselves of the at-one-time-in-one-place fallacy and of the typological notion of "the Neolithic."

The spread was not a single process, but depended on different crops and animals. Look at the dates in North Africa. The oldest is furthest west. The dates in southern France are older than three of the four dates from Italy. What fits the data best is spread by sea primarily in about half the time given on the map. Since this is all Mediterranean climate, no great adjustment in crops, animals, or way of life was necessary.

The passage through Europe is a very different matter. Here, in addition to distance, there had to be adaptation to cold winters. A new way of life had to evolve which took some hundreds of years. Then the spread through Europe was quite rapid. Adaptation to the extreme north took a lot more time.

APR 1 1971
Dear Sherry -
Thank you for your
candid comment! I have
passed on an anonymous version
to Luca Cavalli.
Sincerely

Washburn

Just contrast life in the Baltic area to southern France, Spain, North Africa (olives, grapes, fruit, etc.) and it is easy to see why it took approximately 1,500 years longer for a very modified "Neolithic" to reach the Baltic.

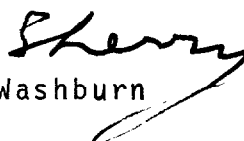
If the spread from Greece is starting around 7,000, it takes 3 or 400 years for diffusion by sea to establish enough large sites in the western Mediterranean so that archeologists have found some.

The spread north started earlier and took 2,000 years to go a shorter distance.

Or, comparing differently, southern France is 6,700 and northern Germany is 6,300, but the Baltic is 5,300. A short distance into a very different ecological zone took 1,000 years.

Bob Rodden in our department is an expert on this very problem. He agrees that it is essential to consider adaptation, historical events, and that these were very different in areas which are treated as the same in this paper.

Sincerely yours,


S. L. Washburn

[my anatomy instructor
at P+S. in 40's]